What is claimed is:

1. A method for decoding a received sequence of symbols using a turbo decoding process that comprises a plurality of decoder iterations, the method comprising:

    determining whether a pre-determined decoder termination threshold metric has been

5   met;

    only if the threshold metric has been met, determining whether a decoder termination test based on a cyclic redundancy check code has been passed; and

    only if the cyclic redundancy check test has been passed, terminating the decoder iterations.

10

2. A method according to claim 1, wherein determining whether the threshold metric has been met comprises determining whether a cross-entropy between a distribution of log-likelihood ratios for each decoder iteration is less than a pre-determined cross-entropy threshold.

15   3. A method according to claim 1, wherein determining whether the threshold metric has been met comprises using a sign change ratio to monitor convergence of the decoding process.

4. A method according to claim 1, wherein determining whether the threshold metric has been met comprises using a sign difference ratio to monitor convergence of the decoding process.

20

5. A method according to claim 1, wherein determining whether the threshold metric has been met comprises using a hard-decision aided test.

6. A method according to claim 1, wherein determining whether the threshold metric has been

25   met comprises using an average absolute log-likelihood ratio.

7. A method according to claim 1, wherein determining whether the threshold metric has been met comprises determining whether an absolute value of a smallest log-likelihood ratio is above a pre-determined absolute value threshold.

30

8. A method according to claim 1, further comprising receiving the sequence of symbols from a parallel turbo encoder.

9. A method according to claim 1, further comprising receiving the sequence of symbols from a
5   serial turbo encoder.

10. A method according to claim 1, further comprising receiving the sequence of symbols from a transmitter comprising an encoder and a modulator.

10   11. A method according to claim 1, wherein the method comprises decoding symbols in a wireless cellular system.

12. A method according to claim 11, wherein the wireless cellular system comprises a W-CDMA transmitter and a W-CDMA receiver.
15

13. An apparatus for decoding a received sequence of symbols using a turbo decoding process that comprises a plurality of decoder iterations, the apparatus comprising:
     a threshold metric processor for determining whether a pre-determined decoder termination threshold metric has been met;
20   a cyclic redundancy check processor for determining, only if the threshold metric processor determines that the threshold metric has been met, whether a decoder termination test based on a cyclic redundancy check code has been passed; and
     a decoder termination means for terminating the decoder iterations, only if the cyclic redundancy check test has been passed.
25

14. An apparatus according to claim 13, wherein the threshold metric processor comprises means for determining whether a cross-entropy between a distribution of log-likelihood ratios for each decoder iteration is less than a pre-determined cross-entropy threshold.

15. An apparatus according to claim 13, wherein the threshold metric processor comprises means for using a sign change ratio to monitor convergence of the decoding process.

16. An apparatus according to claim 13, wherein the threshold metric processor comprises
5   means for using a sign difference ratio to monitor convergence of the decoding process.

17. An apparatus according to claim 13, wherein the threshold metric processor comprises means for using a hard-decision aided test to monitor convergence of the decoding process.

10   18. An apparatus according to claim 13, wherein the threshold metric processor comprises means for using an average absolute log-likelihood ratio to determine whether the threshold metric has been met.

19. An apparatus according to claim 13, wherein the threshold metric processor comprises
15   means for determining whether an absolute value of a smallest log-likelihood ratio is above a pre-determined absolute value threshold.

20. An apparatus according to claim 13, further comprising means for receiving the sequence of symbols from a parallel turbo encoder.
20

21. An apparatus according to claim 13, further comprising means for receiving the sequence of symbols from a serial turbo encoder.

22. An apparatus according to claim 13, further comprising means for receiving the sequence of
25   symbols from a transmitter comprising an encoder and a modulator.

23. An apparatus according to claim 13, wherein the apparatus comprises a wireless cellular system.

24. An apparatus according to claim 23, wherein the apparatus comprises a W-CDMA transmitter and a W-CDMA receiver.

25. A computer program product comprising program code means adapted to control the method
5   of claim 1.

LND99 250815-1.066365.0011